DOCUMENT RESUME

ED 112 570 EC 073 764

| | |
|---|---|
| AUTHOR | Peniston, Eugene |
| TITLE | An Evaluation of the Portage Project: A Comparison of a Home-Visit Program for Multiply Handicapped Preschoolers and Head Start Program. |
| SPONS AGENCY | Office of Education (DHEW), Washington, D.C. Div. of Handicapped Children and Youth. |
| PUB DATE | 75 |
| NOTE | 14p.; Paper presented at the Annual Meeting of the American Educational Research Association (Washington, D.C., March 30-April 3, 1975); For related document, see EC 062 927 |
| EDRS PRICE | MF-$0.76 HC-$1.58 Plus Postage |
| DESCRIPTORS | Diagnostic Teaching; Exceptional Child Research; *Home Instruction; Intervention; Itinerant Teachers; *Multiply Handicapped; *Parent Role; *Precision Teaching; Preschool Education; Program Descriptions; *Program Effectiveness |
| IDENTIFIERS | Developmental Disabilities; *Project Portage; Wisconsin |

ABSTRACT

Evaluated was the effectiveness of the Portage Home Visit (PHV) Parent Involvement Program in improving the IQ's, and motor, language, adaptive and personal-social developmental skills of 36 multiply handicapped developmentally delayed preschoolers in rural Wisconsin during 36 consecutive weekly sessions. Home trainers provided parents with technical assistance, an instructional model that included a prescriptive precision teaching approach using positive reinforcement, and information on how to record the children's performance in regard to the prescribed activities. Analysis of pre- and post-test data indicated that Ss showed significant gains in IQ, adaptive behavior, language development and personal-social skills, but that the PHV program was not effective in enhancing their motor coordination skills (due perhaps to the severity of Ss' physical deficits). (LH)

**********
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
**********

ED112570



# AN EVALUATION OF THE PORTAGE PROJECT: A COMPARISON OF A HOME-VISIT PROGRAM FOR MULTIPLY HANDICAPPED PRE-SCHOOLERS AND HEAD START PROGRAM*

EUGENE PENISTON

SOUTHSIDE VIRGINIA TRAINING CENTER

PETERSBURG, VIRGINIA

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ABSTRACT: The purpose of the study was to evaluate the Portage Home-Visit Parent Involvement Program and its effectiveness in improving I.Q.'s, motor, language, adaptive and personal-social developmental skills of multiply handicapped children.
Thirty-six multiply handicapped preschoolers participated in the experimental Portage Home-Visit Parent Involvement Project. The educational procedure was a prescriptive, precision teaching approach using positive reinforcement. Parents were primarily responsible for teaching their child in the home-family setting. Home Trainers provided technical assistance and a teaching model. Analysis of the data yielded significant gains in IQ, adaptive behavior, language development and personal-social skills.

Early childhood education has a special province in the education of multiply handicapped preschool children. Changes which are being made at all levels of education to accommodate the multiply handicapped and research of the past decade in child growth and development, indicate that early childhood experiences are crucial for all later development (Frandsen & Barlow, 1940; Reymert & Hinton, 1940; Klaus & Gray, 1962; Weikart, 1964; Alpern, 1966; Larson & Olson, 1965; Swift, 1965).

The goals of preschool and compensatory programs are to provide the assumed appropriate experiences, cultural enrichment and training in readiness skills of the kind presumably possessed by "middle class normal" children of the same chronological age.

---

* This research was supported by the United States Office of Education, Department of Health, Education and Welfare. Education of the Handicapped Act, P.L. 91-230, Title VI, E.S.E.A.

EC073764

The purpose of this experimental study was two-fold. The first part of the study was an evaluation of the effectiveness of the Portage Home-Visit Parent Involvement Preschool Program (PHV) compared to a Head Start (HS) type program. The second part of the study was to analyze the PHV program as it relates to behavioral changes in cognitive developmental skills, IQ gains, motor skills, adaptive behavior, language development and personal-social skills of multiply handicapped preschool children.

Parent involvement is considered to be the most important main activity. The presumption here is that the parents who become involved in planning activities which affect their families so much will be more willing to support these activities and will be more likely to strengthen home life in any way possible to help their children develop (Garrell, 1968; Frost, 1966; Riessman, 1962; Viscovich, 1967; Flazell, 1966; Enzmann, 1966).

Some of the major studies on early childhood education, as an approach to compensatory education, showed that the introduction of this diversified educational service, at the three to four year old levels, is associated with some mental age gains in intellectual function, language development, cognitive ability and motivation for doing school work (Gray & Klaus, 1965; Beller, 1965; Pitcher, 1966; Alpern, 1966). The conclusion of the studies was that there is a tendency for children treated to show initial gains far greater than those of the assumed peers. However, this difference has tended to lessen or disappear by the second grade (Frandsen & Barlow, 1940; Reymert & Hinton, 1940; Gray & Klaus, 1965; Weikart, 1964; U.S. Commission on Civil Rights, 1967; Larson & Olson, 1965).

None of the above studies included an assessment of pupil outcomes relating to cognitive style patterning, motor perception or cognitive skills as described in this experimental project on multiply handicapped children.

## METHOD

### SUBJECTS

The sample was composed of 63 white preschool boys and girls who were randomly selected from twenty-three rural communities in central Wisconsin, which had been designated by the Office of Economic Opportunity as economically depressed areas. The PHV group consisted of 36 multiply handicapped subjects (children diagnosed as emotionally disturbed, mentally retarded, physically handicapped, visual, speech-hearing and language impairments) with a mean age of 3 years, 4 months. The HS group consisted of 27 physically normal subjects (children of average and above intelligence quotients) with a mean age of 3 years, 9 months. The groups of subjects were split randomly with one group in each preschool assigned experimental status by computer.

### MATERIALS

The Cattell Infant and/or Stanford-Binet (C-B) Scale was used to measure the subjects' intellectual functioning level and the Gesell Developmental Schedule (GDS) was used to measure the subjects' developmental level, (Gesell, 1953). This inventory included items arranged in developmental sequence that measure four categories of abilities. The categories of GDS included the following complex behavioral skills: Motor Behavior, Adaptive Behavior; Language Behavior; and Personal-Social Behavior. Items were administered in each category within the area between the point where the child passed all of the items and the point where he failed all of the items.

The pre and post testing sessions were conducted by the principal investigator and other trained examiners who did not know in which group the child was placed.

Developmental scores were determined for each child in the following

manner: Within each of the four categories of abilities, the child was assigned one plus point for each skill passed according to the criteria defined in the test manual. The investigator determined the developmental key-age score for the purposes of this study. Each child received a pre and post test key-age score in each of the four ability categories previously mentioned.

PROCEDURE

The subjects in the Portage Project received the PHV Training Program while the other subjects identified as the HS Group, received a cultural enrichment type of treatment.

Each child was administered the aforementioned psychological tests with the final tests being readministered approximately nine months after the pretest.

Preservice and inservice training sessions were conducted to orient and train the staff in the areas of prescriptive teaching, evaluation techniques, child growth and developmental patterns and home training techniques. Training sessions were held early in the school year in order for these Home Trainers to understand the various activities and home services connected with the PH Program. The previously described program determined the techniques and methods of child training applicable to the particular handicapped child's strengths and weaknesses.

Initially, before the teaching program began, a Home Trainer tested the child to be sure that he was in need of an early intervention program. The PHV project did not serve a child if he was functioning at or near chronological age level in the developmental areas. A checklist covering behaviors in the developmental areas, from birth to five years of age, was used as an

assessment device that was utilized to tap behavior in five areas of growth and development. These included self-help skills, cognitive skills, socialization skills, language skills and motor skills. After the assessment was completed, the Home Trainer knew what the child could already do in the five areas of growth and development. This assessment was used as the initial baseline behavior. Based on the evaluation, the Home Trainer then prescribed the next item on the checklist, often breaking the behavior, which is called a long-term goal, into smaller bits of behavior. This enabled each child, regardless of the severity of the handicap, to achieve success within a one week period of time. Each child was provided with an individualized curriculum based on his present functioning behavior.

The Home Trainer then entered each child's home with an average of three to four prescriptions per week and any materials needed to carry out these activities. First, the Home Trainer collected baseline data on each new learning task. The data was vital to the teaching and evaluation process for it was important to first descover how close the child was to achieving the prescription. Again, what can he already do? For instance, a prescription might be for hopping on one foot in place without support, five times per trial, three trials per day. Baseline data might indicate that success in this activity is not likely to be achieved in one week, therefore, the Home Trainer would change the prescription, go back to a prerequisite skill and prescribe hopping on one foot in place with support, five times per trial, three trials per day. Baseline data was collected on each new perscription. Each task was then demonstrated to the parent as the Home Trainer worked with the child. The Home Trainer then observed the parent working with the child on the prescription, and she would often supply the

parent with additional teaching information such as, "How about increasing the amount and intensity of praise and see if he will perform better", or "You need to reinforce him immediately after he successfully performs the task". The parent was expected to stay with the child and the Home Trainer during the session because this visit was designed to teach the mothers how to teach, how to record and how to reinforce the prescribed behavior for the coming week. The parents were encouraged to contribute curriculum ideas and teaching methods and the Home Trainer listened. The parent was expected to have the child practice these prescriptions each day and to keep a record on the activity sheet for the Home Trainer to review and collect. The Home Trainer evaluated the prescribed behaviors weekly by recording baseline and post-baseline data. A complete evaluation was undertaken three times a year, using the usual IQ tests and Developmental Scales. The weekly assessment of the child's behavior was an assessment of the Home Trainer's ability to prescribe appropriate curriculum.

Each multiply handicapped child in the group was exposed to 36 consecutive weekly activities of the PHV Program.

As the program progressed, the Home Trainer re-evaluated and modified her objectives and the program according to the results of the behavioral weekly sheets.

## ANALYSIS OF DATA

An unequal N single classification analysis of covariance model was employed to compare the performance of the PHV group with the HS group on the GDS four subtests, motor, adaptive, language, presonal-social and IQ gains by co-varying the influence of age, IQ and effects of pretesting.

## RESULTS

Complete data was available for all of the participants in the experimental

project (PHV and HS). Pretest and posttest means for the PHV group and the HS group along with the adjusted posttest means on the GDS scales and the C-B test are presented in Table 1.

Insert Table 1 about here

Each of the group means listed is a mean average of the subjects' achievement obtained across the aforementioned preschool programs. The PHV program was superior to the HS program and it was significantly better with respect to average IQ, adaptive, language and personal-social gains.

Table 2 summarizes the single classification analysis of covariance for the GDS scales (adaptive, language, personal-social, motor) and C-B (IQ) test results based on the 36 weekly consecutive activities from the content of the preschool programs.

Insert Table 2 about here

The analysis of covariance statistical procedure was used to determine if any difference existed among the GDS and C-B adjusted posttest means. A significant F ratio for adaptive behavior ($F=9.62$, $df=1/61$, $P < .01$), a significant F ratio for language development ($F=5.92$, $df=1/61$, $P < .05$) and a significant F ratio for personal-social behavior ($F=4.98$, $df=1/61$, $P < .05$) were obtained. However, there was no significant differences between both groups' (PHV and HS) performance on motor skills.

A significant F ratio for IQ gains ($F=17.68$, $df=1/61$, $P < .01$) was obtained. This table reveals a significant difference between the PHV and HS groups in adaptive, language and personal-social development skills as well as IQ gains with the PHV group earning the higher achievement scores. Both the PHV and HS groups showed improvement from pretesting and posttesting on all criterion variables. However, a closer inspection of the mean values reveals that the PHV group earned significantly higher achievement scores.

The results of the analysis of the criterion measures reflecting cognitive

Developmental skills and intelligence functioning may be summarized by noting that the PHV group showed significant improvement on the criterion measures reflecting developmental improvement as well as significantly more improvement than the HS group.

## CONCLUSIONS AND DISCUSSION

This study investigated the effectiveness of the PHV program on the cognitive developmental skills and intellectual functioning of multiply handicapped children. The GDS scales were used as criterion measures because they correlate highly with cognitive skills and intelligence (Gesell, 1953; Knablack & Pasamarick, 1960, 1962). On three of the GDS scales (adaptive, language, personal-social) and C-B (IQ), the mean scores of the multiply handicapped children who received the PHV program improved significantly over the 36 consecutive weekly training activities. Scores of normal children who received no parent involvement syndrome remained essentially unchanged. This investigation tends to confirm those findings of Deutsch (1962), Gray & Klaus (1965) and Heber's (1968).

With the growing concern for more parental involvement in education and in providing good educational services to handicapped children in rural areas, this model has proven that through home training, parents can teach their children and that their children can, indeed, learn. Further evidence indicated that home experiences, in which the parents are involved with their children, appear to be one of the most important interventive ingredients that influence their children's intellectual functioning, adaptive behavior, language development and personal-social behavior. It would appear that the Portage preschool children's physical conditions were so severe that the PHV program was not effective in enhancing their motor coordination skills.

In view of the significant evidence with respect to the effectiveness of the

PHV program, it would seem that a model such as a home-visit program was to be innovative in changing multiply handicapped preschool children's behavior and in evaluating early childhood educational programs.

Any real understanding of the multiply handicapped preschool child awaits longitudinal studies involving panels or cohorts of preschool children followed through four or five years of their schooling. Finally, further research experiments and replication will, of course, be necessary in order that the findings of this paper be confirmed. Your participation is, therefore, invited.

Table 1: Cattell-Binet Intelligence Scale and Gesell's Developmental Scales (Adaptive, Language, and Personal-Social) Pretest, Posttest, and Adjusted Posttest Mean Scores for PHV and HS Programs

| Preschool Programs | N | Premean | Postmean | Adjusted Postmean |
|---|---|---|---|---|
| | | Cattell-Binet Scale | | |
| PHV | 36 | 103.00 | 361.61 | 433.28 |
| HS | 27 | 350.00 | 455.55 | 359.98 |
| | | Language Scale | | |
| PHV | 36 | 125.00 | 342.44 | 427.00 |
| HS | 27 | 355.00 | 462.96 | 350.21 |
| | | Personal-Social Scale | | |
| PHV | 36 | 150.00 | 353.38 | 424.90 |
| HS | 27 | 350.00 | 455.55 | 360.20 |
| | | Adaptive Scale | | |
| PHV | 36 | 170.00 | 383.00 | 468.08 |
| HS | 27 | 360.00 | 475.25 | 361.80 |
| Total | 63 | | | |

Table 2: Summary of Analysis of Covariance for Achievement Differences Between PHV and HS Groups Controlling for IQ, Age, And Prior Developmental Skills

| Source of Variation | df | MS | Adaptive Skills F | Language Skills F | Personal-Social Skills F | IQ Gains F |
|---|---|---|---|---|---|---|
| Between Subjects | 1 | | | | | |
| Within Subjects | 61 | 3521.33 | 9.62** | | | |
| Between Subjects | 1 | | | | | |
| Within Subjects | 61 | 6277.91 | | 5.92* | | |
| Between Subjects | 1 | | | | | |
| Within Subjects | 61 | 5295.77 | | | 4.98* | |
| Between Subjects | 1 | | | | | |
| Within Subjects | 61 | 4031.65 | | | | 17.68** |
| Total | 62 | | | | | |

** P $<$ .01, F = 9.62, df = 1/61.
** P $<$ .01, F = 17.68, df = 1/61.
* P $<$ .05, F = 5.92, df = 1/61.
* P $<$ .05, F = 4.98, df = 1/61.

## REFERENCES

Alpern, Gerald D., "The Failure of a Nursery School Enrichment Program for Culturally Deprived Children", (A paper presented at the 1966 meeting of the American Orthopsychiatric Association), San Francisco, California, 1966.

Beller, E. K., Annual Report of Research in the Philadelphia Experimental Nursery School Project, Philadelphia Council for Community Advancement, 1965.

Deutsch, M., The Disadvantaged Child and the Learning Process: Some Social, Psychological and Developmental Considerations, Columbia University, New York Paper prepared for The Ford Foundation, "Work Conference on Curriculum and Teaching in Depressed Urban Areas," 1962.

Enzmann, Arthur, M., "Preprimary Program: Mt. Vernon, New York, Mixes Mother and Montessori," Nations Schools, Vol. 77, No. 6, 1966, p. 60.

Flazell, D. H., "Woodward, Iowa, Takes Head Start Home To Parents," Nations Schools, Vol. 77, No. 6, 1966, pp. 61-62.

Frandsen, Arden and Barlow, Frances P., "Influence of the Nursery School on Mental Growth, " National Social Study of Education, 39th Yearbook, Part II, 1940, pp. 143-148

Frost, Joe L., Early Childhood Education Discovered, ed. Keith Osborn, "Project Head Start An Assessment," Holt, Reinehart and Winston, Inc., New York: 1968, pp. 282-293.

Garrell, Janet Lee, "Changing Parent-Attitudes and Improving Language and Intellectual Abilities of Culturally Disadvantaged Four Year Old Children Through Parent Involvement," Educational Resources Information Center, U.S. Office of Education, 1968.

Gesell, Arnold, "Gesell Developmental Schedules," In Contribution Toward Medical Psychology: Theory and Psychodiagnostic Methods, Vol. 2, 1953, pp. 485-494.

Gray, Susan W., and Klaus, R.A., "An Experimental Preschool Program for Culturally Deprived Children," Child Development, December, 1965, Vol. 36, pp. 887-898.

Heber, Rick, "Research on Education and Habilitation of the Mentally Retarded," Paper read at conference on Sociocultural Aspects of Mental Retardation, Peabody College, Nashville, Tennessee, June, 1968.

Klaus, Rupert A., and Gray, Susan W., "Early Training Project," Interim Report, November, 1962.

Knablock, Hidla, and Pasamavick, Benjamin, "An Evaluation of the Consistency and Predictive Value of the 40 Week Gesell Developmental Schedule," Child Development and Child Psychiatry, 1960, pp. 10-31.

Larson, R. G., and Olson, J.L., "A Pilot Project for Culturally Deprived Kindergarten Children," Final Report, Racine, Wisconsin, July, 1965.

Pitcher, Evelyn, G., "An Evaluation of the Montessori Method in School for Young Children," Childhood Education, No. 8, 1966, pp. 489-492.

Reymert, M. L., and Hinton, R. T. Jr., "The Effect of a Change in a Relatively Superior Environment Upon the I.Q.'s of One Hundred Children," National Social Study of Education, 39th Yearbook, Part II, 1940, pp. 225-268.

Riessman, Frank, The Culturally Deprived Child, Harper and Rowe, New York: 1962.

Swift, Joan, M., "Effects of Early Group Experience: The Nursery School and Day Nursery," Child Development Research, Vol. 1, 1964.

U. S. Commission on Civil Rights, Racial Isolation in the Public Schools, Vol. 1 Washington, D. C.: U. S. Government Printing Office, 1967, pp. 115-140.

Viscovich, Andrew J., "A Preschool Project," Childhood Education, Vol. 42-43, 1965-1967, pp. 44-48, (Parent participation in school related activities with their children in the home).

Weikart, David, Et. al., "Perry Preschool project", Progress Report, Ypsilanti, Michigan, 1964.